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AUTHOR Riddick, Carol Cutler; Leadley, Samuel M.
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ABSTRACT

In order to investigate the extent to which rural residents are represented among consumer Health Systems Agencies (HSA) governing board members, alternative indices of rurality were examined. Data were used from eight HSA's in Pennsylvania and one bi-state HSA (Pennsylvania and New York); 241 consumer addresses were analyzed. Two discrete, single variable measures which focused upon demographic and geographic approaches were used to define rurality in order to determine the degree to which the proportion of consumer "rural" members agreed with similar proportions of the population. Using a "rough approximate" test it was found that for either measure the proportion of HSA consumer board members did not consistently parallel the residential characteristics of the population in the various health service areas. The two indices were then compared to determine if an HSA region varied from one index to another; again, discrepancies existed depending on the index of rurality used to classify consumer residencies. It was concluded that if HSA's continue to be required to have governing boards broadly representing the geographic areas of their health service areas, then a number of issues have to be resolved; the foremost of these is determining the philosophical underpinning for the working definition of rural (i.e., on the basis of demographic and geographic characteristics, economic characteristics, or occupational characteristics). (BR)

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# A COMPARATIVE EVALUATION OF INDICES OF RURALITY - ARE RURAL CONSUMERS ADEQUATELY REPRESENTED IN THE SHAPING OF COMMUNITY HEALTH SERVICES?

by

Carol Cutler Riddick

and

Samuel M. Leadley

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Carol Cutler Riddick, M.S., is Instructor of Extension Health Education in the Department of Agricultural Economics and Rural Sociology at The Pennsylvania State University, 106 Weaver Building, University Park, PA 16802 (Office Phone: 814-863-0339; Home Phone: 814-234-8070). Samuel M. Leadley, Ph.D., is Associate Professor of Rural Sociology in the Department of Agricultural Economics and Rural Sociology at The Pennsylvania State University, 204 Weaver Building, University Park, PA 16802 (Office Phone: 814-865-0455; Home Phone: 814-237-5934).

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ABSTRACT

The equitable representation of consumers on Health Systems Agency (HSA) Boards of Directors is mandated by PL 93-641. Achieving that goal has eluded to, at least some extent, the majority of the eight HSAs analyzed in this study. Rural consumers are substantially underrepresented in varying degrees in five of the eight HSA areas.

If HSAs are required to have governing boards which broadly represent the geographic areas of their health service areas, then a number of issues must be resolved regarding rural representation. These include a philosophical underpinning for defining rural as well as empirical problems of number of indicies to include and administrative practicality of recruiting and retaining rural board members.

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# A COMPARATIVE EVALUATION OF INDICIES OF RURALITY - ARE RURAL CONSUMERS ADEQUATELY REPRESENTED IN THE SHAPING OF COMMUNITY HEALTH SERVICES

## Introduction

Who decides which health care needs are provided for in America? After investigating who controls our health care institutions, Vicente Navarro concluded that in the past health care resources were allocated by the elite - upper-class, white, male, health care providers and financiers in our society. In the wave of the New Federalism era, Congress decided to turn back to a strategy practiced by our forebears - community determination via participatory democracy.[1] In December 1974, the National Health Planning and Resource Development Act was legislated as Public Law (PL) 93-641.

PL 93-641 created a national network of over 200 organizations called Health Systems Agencies (HSA). The governing boards of these organizations are empowered to plan, develop, and regulate health services within their geographically prescribed regions. The purposes for which HSAs were developed include:

. Improving health status.

. Increasing the accessibility, acceptability, continuity, and quality of care.

. Restraining unnecessary cost for health services, and

. Preventing unnecessary duplication of health resources.

Nationally over 10,000 volunteers are involved with the HSAs in guiding the community health planning and development mission. By law, between 51 and 60 percent of an HSAs governing body must be consumers of health services. The consumer majority must also "broadly represent geographic areas of the health area."[2]

The regulations promulgated by the Department of Health, Education and Welfare to implement the representational requirements state that:

> Recognizing the extreme complexity and variety in designated health service areas, the Department wishes, at this stage, to give as much discretion as legally permissible to health systems agencies. The Department does state that in its view although the term "broad representative" does not necessitate an equal proportion, it does indicate that the consumer majority should roughly approximate in its representational aspects, the whole population of the health service area (emphasis added).[3]

Theodore Lowi's[4] "Theory of Interest Group Liberalism" best describes the spirit and modus operandi of PL 93-641. Lowi's theory is composed of three basic assumptions: (1) society is divided into organized interest groups which are easily defined by shared geographic, economic, cultural, or ethnic interests; (2) organized interest groups will answer and check each other effectively as each makes claims on society's resources; and (3) the role of government is to ensure access to those well-organized interest groups and to ratify agreements settled upon by competing leaders.

The National Health Planning and Resources Development Act embraces the above noted political principle of pluralism. The intent of this law was to insure the adequate representation of groups traditionally excluded or underrepresented in the health planning process. Lowi's theory provides a basis for questioning whether or not HSAs are indeed including rural consumer representatives highlighted in PL 93-641.[5]

## Purposes

By empirically examining alternative indices of rurality the purpose of this study was to investigate the extent to which rural residents are represented among consumer HSA governing board members.

Methodology

The data are from eight HSAs in Pennsylvania, and one bi-state HSA (Pennsylvania and New York).[6] These agencies were chosen because complete data were available regarding their board memberships. For each of the 454 persons, who were members of Boards as of Winter 1977-78, it was possible to obtain name, address, and memberships status (i.e., consumer, provider), Table 1.

Consumer representatives rather than providers are the focus of this analysis. The latter category was excluded for three reasons, two conceptual and one empirical. One conceptual justification is that PL 93-641 in spelling out a concern for rural/urban representation, mentions "broadly representative of geographic areas" for consumer board members only. Another rationale for focussing on consumers is that it seems apparent that a consumer board member "represents" other consumers like him or herself. Not so apparent is who providers represent - other professionals like themselves, organizations and/or clients they serve? Thus conceptually, the issue of who represents whom is clearer for consumer members than for providers and elected officials.

Thirdly, the provider was excluded because the data economically accessible for providers were qualitatively different from the consumer data. That is, while most consumers were listed by their residential addresses, nearly all of the providers' addresses were to organizations and places of business.

Analyzed for this study, therefore, were 241 consumer addresses. Approximately sixteen percent of these addresses were nonresidential in the secondary data. Additional primary data collection (telephone directories

and agency records) reduced the number of consumers excluded because of inadequate address data to zero.[7]

The empirical analysis describes residential representation among consumer board members and compares this to the population distribution (rural/urban) of the HSA area. Each residential address was classified as either rural or urban. Two different geographic units, based on 1970 Census population data, were used for classification.[8] One was the Standard Metropolitan Statistical Area (SMSA)[9] - an area covering at least one county and often two or more counties. For Part 1 of our analysis addresses falling within what the Bureau of Census has defined as SMSA counties were considered urban and those contained in non-SMSA counties were considered by us as rural.[10] Using this unit of classification the percentage of non-SMSA population within an HSA area was calculated.

While convenient units of analysis, because of the wide array of data assembled by SMSA and non-SMSA categories, the use of this geographic unit to represent a homogeneous urban population can be misleading. For example, 26 percent of the population residing in the SMSAs represented in this analysis are also classified by the Census Bureau as "rural" residents. For Part 2 of our analysis a second geographic unit was used in classifying residential addresses of consumer board members. This unit, minor civil division, is represented as a town, township, borough, village or city. Following the practice of the Census Bureau, towns and townships were considered rural as well as villages and boroughs with populations less than 2,500 residents.[11] Residents of places greater than 2,500 population were classified as urban residents. Using this designation framework, the total number of rural residents was calculated for an HSA area and the percentage rural calculated for the area.

The criterion for comparison in this analysis is the "rough approximate test" put forth as a suggestion by the court when ruling against a petition to reassure exact low-income proportional representation of an HSA board.[12] A rough approximation permits variation from mathematical accuracy (or variation between actual and expected proportions) of 20 percent (i.e., plus or minus 10 percent).

## Results

In Part 1 of the analysis using SMSA/non-SMSA status as a residential measure, consumer membership on HSA boards was compared with the residential characteristics of each HSA area and the eight area region as a whole, Table 2. Consumer members, classified as non-SMSA residents, are overrepresented; they compose 35 percent of the region's consumer membership while 29 percent of the same geographic region's population lives in non-SMSA counties. A closer examination of the data, however, reveals substantial variation among HSA areas. By using the "rough approximation" text it was found that the Eastern Pennsylvania HSA (Area #2) has significant overrepresentation of non-SMSA consumers (24 percent non-SMSA consumer members as compared to 11 percent non-SMSA population); and Area 4 has a similar situation (27 percent non-SMSA consumer members as compared to 16 percent non-SMSA population).

In Part 2 of the analysis by applying a smaller unit of residential measurement, the minor civil division, as a means of classifying board members' residences a similar comparison was repeated, Table 3. For the entire study area, consumer members classified as rural residents were under-represented. Twenty-nine percent of the area's consumer membership are classified by the authors as rural while 38 percent of the study area's

total population are so classified by the Census Bureau. In none of the nine HSAs is the rural population overrepresented. Five of the HSAs fail the rough approximation test meaning that there is significant rural underrepresentation (Areas #4-8).

Comparing Table 2 to Table 3 one will note that some of the HSAs in Table 3 with the largest discrepancy are among those in Table 2 with smallest ($\leq$ 10 percent) discrepancies in terms of consumer board members versus area residential characteristics.

Conclusion

PL 93-641 includes a mandate for geographical representation among HSA governing board members. Less certain, however, is the question of how to explicitly define this guideline.

The approach used to define rurality depends upon one's implicit definition of "rural." Sinclair and Manderscheid[13] have categorized the indices of rurality as falling into one of three concepts. One concept is based on employment in agriculture or spatially oriented services (e.g., forestry, fishing). Others consider economic and social conditions. A third group is based upon population density and distance to urban centers. Other researchers have applied additional criteria while the federal government uses a variety of special definitions.[14]

This study utilized two discrete, single variable measures which focused upon demographic and geographic approaches to defining rurality. The composition of board members in seven Pennsylvania HSA and one bi-state (New York and Pennsylvania) HSA were examined in order to determine the degree to which the proportion of consumer "rural" members agreed with similar proportions of the population in these health service areas.

Using a "rough approximate" test it was found that for either measure the proportion of HSA consumer board members from these residential

areas does not consistently parallel the residential characteristics of the population in the various health service areas. In addition, the two indices were then compared to determine if an HSA region varied from one index to another. Again, discrepancies existed depending on the index of rurality used to classify consumer residencies.

If HSAs are to continue to be required to have governing boards which broadly represent the geographic areas of their health service areas then a number of issues have to be resolved. Foremost is determining the philosophical underpinning for the working definition of rural (i.e., on the basis of demographic and geographic characteristics, economic characteristics, or occupational characteristics). Then there is the question of whether single or multiple indices should be used? If the latter, what should be the weighting scheme? Superimposed on all these considerations should be attention as to what is practical to implement. A concern, voiced during discussions with HSA professional staff, is that the adoption of certain indicies would result in a bureaucratic nightmare coupled with the likelihood of a greater number of consumer board vacancies.

In addition, further research is needed to determine whether the "broadly representative" consumer majority is indeed including the proper balance of other sectors residing in the health service area. For instance, are the groups as prescribed by PL 93-641 - such as ethnic minorities and females - adequately represented on HSA governing boards? And, which groups are composing, on what for many of the HSAs are their first rung of community involvement, the Sub-Area Councils? Still other areas which need to be explored are determining if (and if so, why) interest group patterns of attrition exist; and, ways that the various representatives can become more knowledgeable and effective HSA participants.[15]

Notes

1. Vincente Navarro, "The Underdevelopment of Health in Rural America: Cause, Consequences and Solution." (Paper presented at the First National Conference on Rural America, Washington, D.C., April 14-17, 1975).
2. Public Law 93-641. §1512(3)(c)(i).
3. Federal Register 12820 (March 26, 1976).
4. T. J. Lowi, The End of Liberalism-Ideology, Policy and the Crisis of Public Authority (New York: W. W. Norton and Co., Inc., 1969).
5. For background reading on other studies which have also analyzed HSA volunteers in regard to demographic characteristics see: (1) Herbert H. Hyman, "HSA Governing Body Composition Analysis of Region II" (Hyattsville, Maryland: Bureau of Health Planning and Resources Development), May 1976; (2) Orkand Corporation, "An Assessment of Representation and Parity of HSAs and SHPDAs" Contract No. HRA-230-76-0210 (Hyattsville, Maryland: Health Resources Administration, June 1977; (3) Doyle Michael, et al., "Power, Participation, and Health; The Case of the Health Systems Agency in Central Illinois" (Urbana, Illinois: University of Illinois, Department of Urban and Regional Planning), Spring 1977; and (4) W. Clark, "Placebo or Cure? State and Local Health Planning Agencies in the South" (Atlanta, Georgia: Southern Regional Council), 1977.
6. HSA I (Philadelphia) was excluded from analysis because all five counties within the health service area have been designated as an SMSA.
7. Residential addresses as a basis for classification have at least three weaknesses. First, the person may not actually reside at that address; rather, he or she may only receive mail there. Second, because the

United States Postal Service maintains both lockbox and general delivery service, some rural residents may pick up their mail in a nonrural center. This phenomenon could lead to an undercounting of rural residents. Finally, not all rural delivery routes are 100 percent rural addresses; some suburban areas near large population centers are designated by rural delivery addresses. This could result in an overcounting of rural residents. No systematically collected data were available for assessing quantitatively the impact of these three weaknesses on the classification process. Personal experience and conversations with a postmaster were used to make a qualitative judgment. We concluded that the errors were small (e.i., not very many persons live in one place and receive mail at another especially in rural Pennsylvania). Also, since two of the weaknesses would bias the classification in opposite directions perhaps the net error would not be excessive.

It is clear, however, that a more adequate data base would be desirable for future analyses using population density as a measure of rurality.

8. Data from the 1970 Census were used in this analysis in order to maintain consistency. Although 1976 estimates of population are available for all counties in the study area, they are neither classified by rural and urban residence nor available for minor civil divisions (towns, townships, villages, boroughs).

9. Except in the New England States, a Standard Metropolitan Statistical Area is a county or group of continguous counties which contains at least one city of 50,000 inhabitants or more, or "twin cities" with a combined population of at least 50,000. In addition to the county, or counties, containing such a city or cities, contiguous counties are included in an SMSA if, according to certain criteria, they are socially and economically integrated with the central city. In this study, of eight health service

areas, there are 13 SMSAs, seven of which include two or more counties and six are single counties (Bureau of the Census, PC1-A-40:7).

10. Bureau of the Census, 1970 Census of Population: Number of Inhabitants; Pennsylvania. PC1-A-40, 1971.

11. The 1970 Bureau of Cenus definition of "rural" based primarily on population density was used for this classification. Of the 66 rural consumer members, one-half had addresses in unincorporated areas (towns, townships, or small rural villages) and one-half had rural delivery addresses from cities, villages, or boroughs near their rural residences. All rural delivery addresses, regardless of the size of the originating community, were assumed to indicate a rural residence (N=32).

12. Texas Acorn et al. v. Texas Area V Health Systems Agency, Inc., 559 F. 2d 1019, fifth cir. (1977).

13. Bill Sinclair and Lester V. Manderscheid, "A Comparative Analysis of Indicies of Rurality - Their Policy Implications and Distributional Impacts." Special Paper Number 22 (East Lansing, Michigan: Michigan State University, Center for Rural Manpower and Public Affairs, August 1974).

14. R. C. Bealer, F. K. Willits and W. P. Kuvlesky, "The Meaning of Rurality in American Society: Some Implications of Alternative Definitions." Rural Sociology, Volume 30, September 1965; pp. 255-266; F. H. Buttel and W. L. Flinn, "Conceptions of Rural Life and Environmental Concern." Rural Sociology, Volume 42; Winter 1977; pp. 544-555; and National Services to Regional Councils, "Regional Community Report:" (Washington, D.C., August 1971).

15. Two undertakings to do this include: "An Educational Program for Planning and Development Community Health Services" (funded in part by a grant

from the U.S. Department of Agriculture-Extension Service) and the "Health Trustees Leadership Program" (currently funded by W. K. Kellogg Foundation). For additional information contact: The Pennsylvania Cooperative Extension Service, Community Affairs Section, 106 Weaver Building, University Park, PA 16802.

Table 1. Board Composition of Health Systems Agencies (HSA): Pennsylvania/ New York, Winter 1977-78.

| HSA[a] | Board Membership | | | | | |
|---|---|---|---|---|---|---|
| | Consumers | | Providers | | Total | |
| | N | % | N | % | N | % |
| 2 | 17 | 57 | 13 | 43 | 30 | 100 |
| 3 | 34 | 59 | 24 | 41 | 58 | 100 |
| 4 | 15 | 52 | 14 | 48 | 29 | 100 |
| 5 | 29 | 56 | 23 | 44 | 52 | 100 |
| 6 | 31 | 52 | 29 | 48 | 60 | 100 |
| 7 | 33 | 49 | 34 | 51 | 67 | 100 |
| 8 | 66 | 51 | 63 | 49 | 129 | 100 |
| 9 | 16 | 55 | 13 | 45 | 29 | 100 |
| Total | 241 | 53 | 213 | 47 | 454 | 100 |

[a]HSA 1 (Philadelphia) was excluded because all five counties within the health service area have been designated as an SMSA.

Table 2. Rural (or Non-SMSA) Consumer Membership on Health Systems Agency (HSA) Boards in Relation to Rural (or Non-SMSA) Population of Entire Service Area: Pennsylvania/New York, Winter 1977-78.

| HSA | Consumer Board Members N | Non-SMSA Consumer Members N | Non-SMSA Consumer Members % | Non-SMSA Population of Area Served % | Representational Difference (Column 4-Column 5)[a] |
|---|---|---|---|---|---|
| 2 | 17 | 4 | 24 | 11 | +13 |
| 3 | 34 | 8 | 24 | 17 | +7 |
| 4 | 15 | 4 | 27 | 16 | +11 |
| 5 | 29 | 29 | 100 | 100 | 0 |
| 6 | 31 | 5 | 16 | 19 | -3 |
| 7 | 33 | 20 | 61 | 64 | -3 |
| 8 | 66 | 11 | 17 | 27 | -10 |
| 9 | 16 | 4 | 25 | 19 | +6 |
| Total | 241 | 85 | 35 | 29 | +6 |

[a]Percentage by which non-SMSA persons are overrepresented (+) and underrepresented (-).

Source: U.S. Bureau of the Census, 1970 Census of Population; Number of Inhabitants; Pennsylvania, PC(1)-A40 (1971) and U.S. Bureau of the Census, 1970 Census of Population; Number of Inhabitants, New York, PC(1)-A34 (1971).

Table 3. Rural (or Non-Urban Minor Civil Division) Consumer Membership on Health Systems Agency (HSA) Boards in Relation to Rural (or Non-Urban Minor Civil Division) Consumer Population of Entire Service Area: Pennsylvania/New York, Winter 1977-78.

| HSA | Consumer Board Members N | Rural MCD Consumer Members N | Rural MCD Consumer Members % | Rural MCD Population of Area Served % | Representational Difference (Column 4-Column 5)[a] |
|---|---|---|---|---|---|
| 2 | 17 | 4 | 24 | 31 | -7 |
| 3 | 34 | 8 | 24 | 30 | -6 |
| 4 | 15 | 4 | 27 | 45 | -18 |
| 5 | 29 | 10 | 34 | 58 | -24 |
| 6 | 31 | 5 | 16 | 27 | -11 |
| 7 | 33 | 6 | 18 | 48 | -30 |
| 8 | 66 | 24 | 36 | 51 | -15 |
| 9 | 16 | 7 | 44 | 53 | -9 |
| Total | 241 | 68 | 29 | 38 | -9 |

[a]Percentage by which rural persons are overrepresented (+) and underrepresented (-).

Source: U.S. Bureau of the Census, 1970 Census of Population; Number of Inhabitants; Pennsylvania, PC(1)-A40 (1971) and U.S. Bureau of the Census, 1970 Census of Population; Number of Inhabitants, New York, PC(1)-A34 (1971).